

WHAT IS CLAIMED IS:

1. A bi-stable restrictor for an elevator car door comprising:
a primary source of electrical power;
a detecting member in electrical communication with said primary source of
5 electrical power; and
a locking device connected to said detecting member and adapted to selectively
move between a locked position to lock an elevator car door and an
unlocked position to unlock the elevator car door in response to
actuation controlled by said detecting member, wherein, in the event of
10 a loss of said primary source of electrical power said locking device
remains in the selected locked or unlocked position at the time of the
loss of said primary source of electrical power.
2. The bi-stable restrictor according to Claim 1, further comprising a secondary
15 source of electrical power provided as a backup for said primary source of electrical
power, wherein said secondary source of electrical power is connected to and provides
power to said detecting member in the event of the loss of said primary source of
electrical power.
- 20 3. The bi-stable restrictor according to Claim 2, wherein in the event of the loss
of said primary source of electrical power, and a loss of said secondary source of
electrical power, said locking device remains in the selected locked or unlocked position
at the time of the loss of said secondary source of electrical power.
- 25 4. The bi-stable restrictor according to Claim 1, wherein said locking device
is electrically actuated.
5. The bi-stable restrictor according to Claim 4, wherein said locking device
is in electrical communication with said primary source of electrical power.

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6. The bi-stable restrictor according to Claim 1, further comprising an emitting member, wherein said detecting member receives a signal from said emitting member and actuates said locking device in response to such signal.

5 7. The bi-stable restrictor according to Claim 6, wherein said detecting member is an energy detecting member, said emitting member is an energy emitting member, and the signal is energy emitted from said emitting member.

10 8. The bi-stable restrictor according to Claim 7, wherein said detecting member causes said locking device to be actuated to the locked position when detecting the energy emitted by said energy emitting member.

15 9. The bi-stable restrictor according to Claim 1, further comprising a solenoid operably connected to said locking member and electrically connected to said primary source of electrical power, wherein said solenoid selectively causes said locking device to move between the locked and unlocked positions, said solenoid being connected to and controlled by said detecting member.

20 10. A bi-stable restrictor for an elevator car door comprising:
a primary source of electrical power;
a secondary source of electrical power provided as a backup for said primary source of electrical power;
a detecting member in electrical communication with said primary source of electrical power and said secondary source of electrical power; and
25 a locking device connected to said detecting member and adapted to selectively switch said locking device between a locked position to lock an elevator car door and an unlocked position to unlock the elevator car door in response to actuation controlled by said detecting member, wherein, in the event of a loss of said primary source of electrical power and said
30 secondary source of electrical power said locking device remains in the

selected locked or unlocked position at the time of the loss of said secondary source of electrical power.

5 11. The bi-stable restrictor according to Claim 10, wherein said locking device is electrically actuated.

12. The bi-stable restrictor according to Claim 11, wherein said locking device is in electrical communication with said primary source of electrical power and said secondary source of electrical power.

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13. The bi-stable restrictor according to Claim 10, further comprising an emitting member, wherein said detecting member receives a signal from said emitting member and actuates said locking device in response to such signal.

15 14. The bi-stable restrictor according to Claim 13, wherein said detecting member is an energy detecting member, said emitting member is an energy emitting member, and the signal is energy emitted from said emitting member.

20 15. The bi-stable restrictor according to Claim 14, wherein said detecting member causes said locking device to be actuated to the locked position when detecting the energy emitted by said energy emitting member.

25 16. The bi-stable restrictor according to Claim 10, further comprising a solenoid operably connected to said locking member and electrically connected to said primary source of electrical power and said secondary source of electrical power, wherein said solenoid selectively causes said locking device switch between the locked and unlocked positions, said solenoid being controlled by said detecting member.

17. A method of controlling an opening of elevator car doors, comprising the steps of:

- 5 a) providing a detecting member elevator connected to a primary source of electrical power and producing a signal from the detecting member responsive to a position of an;
- b) selectively controlling a locking device for elevator car doors with the signal produced by the detecting member;
- c) providing a secondary source of electrical power, and operating the secondary
10 source of electrical power as a backup to the primary source of electrical power to supply electrical power to the detecting member upon loss of the primary source of power; and
- d) causing the locking device to remain in the selected position upon a loss of the secondary source of electrical power.